

WHAT IS CLAIMED IS:

1. A filter support sleeve for use with a filter element, the support sleeve comprising at least one substantially circular end ring and a metal strip wound in a helical configuration, wherein the metal strip has at least two edges joined by a spiral weld to form a hollow cylinder, wherein the metal strip has a plurality of substantially square-shaped perforations for passage of fluid flow through the support sleeve.
2. The filter support sleeve of Claim 1, wherein the perforations are oriented such that when the metal strip is helically wound, a line parallel to each one of the sides of the square-shaped perforations intersects a plane encompassing the circular end ring.
3. The filter support sleeve of Claim 1, wherein the perforations are arranged in a plurality of parallel rows.
4. The filter support sleeve of Claim 1, wherein the perforations are arranged in a plurality of staggered rows.
5. The filter support sleeve of Claim 1, where an outer margin band of the metal strip is free from perforations.
6. The filter support sleeve of Claim 5, wherein the metal strip is wound such that the outer margin band of the metal strip has a pitch angle of between 30 and 60 degrees.
7. The filter support sleeve of Claim 1, wherein the metal strip is stainless steel.
8. A filter support sleeve for a filter element, comprising at least one end ring and a metal strip, wherein the metal strip is wound in a helical configuration joined by a spiral weld to form a hollow cylinder, and wherein the metal strip has a plurality of multi-sided perforations for passage of fluid flow through the support sleeve oriented such that when the metal strip is helically wound, a line parallel to each of the sides of the multi-sided perforations intersects a plane encompassing the circular end ring.
9. The filter support sleeve of Claim 8, wherein the perforations are arranged in a plurality of parallel rows.
10. The filter support sleeve of Claim 8, wherein the sides of the perforations are substantially straight.
11. The filter support sleeve of Claim 8, wherein the perforations are substantially square-shaped perforations.

12. The filter support sleeve of Claim 8, wherein an outer margin band of the metal strip is free from perforations.

13. The filter support sleeve of Claim 12, wherein the metal strip is wound such that the outer margin band of the metal strip has a pitch angle of between 30 and 60 degrees.

14. The filter support sleeve of Claim 8, wherein the metal strip is stainless steel.

15. A filter support sleeve for a filter element, comprising a helical wound sheet wherein edge portions of the sheet are welded to adjacent edge portions of the sheet with a spiral weld having a pitch angle between 30 and 60 degrees to form a hollow cylinder, wherein the sheet has a plurality of square perforation for passage of fluid flow through the support sleeve.

16. The support sleeve of Claim 15, wherein the perforations are oriented such that when the metal strip is helically wound, a line substantially parallel to each side of the square-shaped perforation is skew with a lengthwise axis of the support sleeve.

17. A filter apparatus for filtering a fluid comprising:

a cylindrical filter element; and

a filter support sleeve supporting the filter element comprising a metal strip wound in a helical configuration, wherein two edges of the metal strip are joined by a spiral weld to form a hollow cylinder, wherein the metal strip has a plurality of multi-sided perforations for passage of fluid flow through the support sleeve.

18. The filter apparatus of Claim 17, wherein the filter support sleeve is oriented to be outside the filter element.

19. The filter apparatus of Claim 17, wherein the filter support sleeve is oriented to be inside the filter element.

20. The filter apparatus of Claim 17, wherein the filter element comprises a plurality of pleats parallel to the axial direction of the filter element and have a length substantially equal to said filter element, and wherein the perforations allow the passage of fluid flow through the support sleeve to each of the plurality of pleats

21. The filter apparatus of Claim 17, wherein the filter support sleeve further comprises at least one end ring, wherein a line parallel to each of the sides of the multi-sided perforations intersects a plane encompassing the end ring.

22. The filter apparatus of Claim 17, wherein the perforations are arranged in a plurality of parallel rows.

23. The filter apparatus of Claim 17, wherein the sides of the perforations are substantially straight.

24. The filter apparatus of Claim 17, wherein the perforations are substantially square-shaped perforations.

25. The filter apparatus of Claim 17, where an outer margin band of the metal strip is free from perforations.

26. The filter apparatus of Claim 24, wherein the metal strip is wound such that the outer margin band of the metal strip has a pitch angle of between 30 and 60 degrees.

27. The filter apparatus of Claim 17, wherein the metal strip is stainless steel.

28. A filter apparatus for filtering a pressurized fluid comprising:

 a cylindrical filter element; and

 a filter support sleeve comprising a metal strip wound in a helical configuration, wherein two sides of the metal strip are joined by a spiral weld to form a hollow cylinder, wherein the metal strip has perforation means for passage of fluid flow through the support sleeve.

29. The filter apparatus of Claim 27, wherein the support sleeve is oriented to be outside the filter element.

30. The filter apparatus of Claim 27, wherein the support sleeve is oriented to be inside the filter element.

31. The filter apparatus of Claim 27, wherein the filter element comprises a plurality of pleats parallel to the axial direction of the filter element and having a length substantially equal to said filter element, wherein the perforation means allows the passage of fluid flow through the support sleeve to each of the plurality of pleats.

32. The filter apparatus of Claim 27, wherein the perforation means for passage of fluid flow comprises a plurality of substantially square-shaped perforations.

33. A filter support sleeve for a filter element, the sleeve comprising a metal body having parallel edges, wherein the metal body is wound in a helical conformation, and wherein the edges are bonded in a helical weld to form a cylindrical structure, and wherein

the body has a plurality of openings, wherein the openings comprise at least three substantially straight sides.

34. The filter support sleeve of Claim 31, wherein the edges of the metal body are bonded along a length of the sleeve, such that the edges when bonded are in parallel contact.

35. The filter support sleeve of Claim 31, comprising openings having four sides.

36. The filter support sleeve of Claim 31, comprising openings having five sides.

37. The filter support sleeve of Claim 31, comprising openings having at least six sides.

1000171280001
-0001-0002-